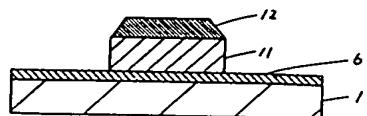
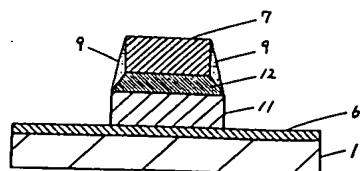


(54) DRY-ETCHING OF POLYSILICIDE STRUCTURE GATE LAMINATE FILM
 (11) 1-239932 (A) (43) 25.9.1989 (19) JP
 (21) Appl. No. 63-68998 (22) 22.3.1988
 (71) SHARP CORP (72) RYOHEI KAWABATA(1)
 (51) Int. Cl'. H01L21/302,H01L21/88,H01L29/78

PURPOSE: To form gate wiring which is rectangle-shaped in cross section and tapered at a upper end thereof by etching a gate laminate film composed of an upper layer silicide film and a lower layer polysilicon film using a predetermined etching gas.

CONSTITUTION: A polysilicide structure gate laminate film composed of an upper silicide film 5 and a lower polysilicon film 11 both formed on a gate oxide film 6 on a substrate 1 is rendered to reactive ion etching by etching gas involving chlorine gas including a chlorine atom in a molecule and nitrogen gas using a resist pattern 7 as a mask. Hereby, an adherend 9 is formed during the etching on the side wall of the resist pattern 7 and on the side wall of the upper layer silicide film 12. When the adherend 9 and the resist pattern 7 are exfoliated, the upper layer silicide film 12 is etched into a trapezoid shape directed upward and into a rectangle shape in cross section with a tapered gate the upper end of which is pointed upward. Hereby, any current leakage between metal wiring and gate wiring is prevented from being produced together with elimination of variations of a gate length.



(54) ASHING METHOD
 (11) 1-239933 (A) (43) 25.9.1989 (19) JP
 (21) Appl. No. 63-67779 (22) 22.3.1988
 (71) TOKYO ELECTRON LTD (72) SHUNICHI IIMURO(1)
 (51) Int. Cl'. H01L21/302,H01L21/30

PURPOSE: To speed up an ashing treatment by carrying out the treatment with use of mixture gas of ashing gas involving ozone and of water vapor.

CONSTITUTION: Ashing gas involving ozone produced in an ozone producer 15 is allowed to flow into a gas/liquid mixing vessel 12 of gas/liquid mixing means 10 through an ashing gas supply tube 9b and further pass through the atmosphere of water vapor produced from vapor 13 introduced in the gas/liquid mixture vessel 12 for mixing of the water vapor therewith. The ashing gas involving the water vapor mixed therein is supplied from an opening 6 formed through a flat plate 7 to a heated water 3 surface to remove the film deposited on the wafer 3 surface. Thereupon, the ozone involved in the ashing gas is gradually decomposed. The decomposition of the ozone is accelerated because the mixed water vapor reduces the amount of the ozone, thereby producing oxygen radicals and hence speeding up the ashing treatment.

